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10/587,022	02/22/2007	Akihito Kohiga	Q96142	1980

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EXAMINER	
CHANG, ERIC	

ART UNIT	PAPER NUMBER
2116	

NOTIFICATION DATE	DELIVERY MODE
11/19/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/587,022	KOHIGA, AKIHITO	
	Examiner	Art Unit	
	ERIC CHANG	2116	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 July 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-35* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-35* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *24 July 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *7-24-06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-35 are pending.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-35 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent 7,373,496 to Sekiguchi et al.

4. As to claim 1, Sekiguchi discloses a rapid restart method comprising: saving, before restart of an OS, process information in the OS relating to a user process [col. 13, lines 14-52, and col. 9, line 39—col. 10, line 5] to a save area on a main memory device [500]; initializing, at the restart of the OS, the main memory area used by the OS while not restarting the main memory area used by the user process [col. 10, lines 6-10]; and restoring the saved process information in the OS after the restart of the OS [col. 10, line 29 – col. 11, line 35].

5. As to claim 2, Sekiguchi discloses a rapid restart method comprising: saving, before restart of an OS, process information in the OS relating to a user process to a save area on a main memory device [col. 13, lines 14-52, and col. 9, line 39—col. 10, line 5], while setting a restart flag for the saved process information to designate whether the process is to be restarted or not [col. 10, lines 14-20]; initializing, at the restart of the OS, the main memory area used by the OS while not restarting the main memory area used by the user process for which the restart flag is set not to restart [col. 10, lines 6-10]; and restoring the saved process information of the user process for which the restart flag is set not to restart in the OS, after the restart of the OS [col. 10, line 29 – col. 11, line 35].

6. As to claim 3, Sekiguchi discloses a rapid restart method comprising: saving, before restart of an OS, process information in the OS relating to a user process to be continuously operated after restart of the OS, to a save area on a main memory device [col. 13, lines 14-52, and col. 9, line 39—col. 10, line 5]; initializing, at the restart of the OS, the main memory area used by the OS while not restarting the main memory area used by the user process [col. 10, lines 6-10]; and restoring the saved process information in the OS, after the restart of the OS [col. 10, line 29 – col. 11, line 35].

7. As to claim 4, Sekiguchi discloses a rapid restart method comprising: saving, before restart of an OS, process information in the OS relating to a user process to be continuously operated after restart of the OS, to a save area on a main memory device by referring to a process ID table in which an identifier for a process to be continuously operated or a process not to be

continuously operated after restart of the OS [col. 13, lines 14-52, and col. 9, line 39—col. 10, line 5]; initializing, at the restart of the OS, the main memory area used by the OS while not restarting the main memory area used by the user process [col. 10, lines 6-10]; and restoring the saved process information in the OS, after the restart of the OS [col. 10, line 29 – col. 11, line 35].

8. As to claim 5, Sekiguchi discloses a rapid restart method comprising: saving, at generation of a user process, process information in the OS relating to the generated user process to a save area on a main memory device [col. 13, lines 14-52, and col. 9, line 39—col. 10, line 5]; setting, at switching of the user process, a restart flag for the saved process information to designate whether the process is to be restarted or not, while updating the process information saved in the save area to the latest state if the process is not to be restarted [603]; nullifying the saved process information, at termination of the user process [1004]; initializing, at restart of an OS, the main memory area used by the OS while not restarting the main memory area used by the user process for which the restart flag is set not to restart [col. 10, lines 6-10]; and restoring, after the restart of the OS, the saved process information of the user process for which the restart flag is set not to restart in the OS [col. 10, line 29 – col. 11, line 35].

9. As to claim 6, Sekiguchi discloses when a restart flag is set for process information relating to a certain user process to designate whether the process is to be restarted or not, all the user processes belonging to the same user application program as the user process are searched,

and restart flags in the process information relating to all the searched user processes are also set to the same value [col. 8, lines 19-37].

10. As to claim 7, Sekiguchi discloses when a restart flag is set for process information relating to a certain user process to designate whether the process is to be restarted or not, all the user processes belonging to the user application program as the user process are searched, and restart flags in the process information relating to all the searched user processes are also set to the same value [col. 8, lines 19-37].

11. As to claim 8, Sekiguchi discloses the OS is started up from an OS main memory image stored in a nonvolatile storage portion forming a part of the main memory device [FIG. 1, "REBOOT LOADER" in main memory device 102].

12. As to claim 9, Sekiguchi discloses every time occurs a write access from the OS to the nonvolatile storage portion during system operation, data in an address range having a predetermined width including the address at which the write access has occurred is copied from the nonvolatile storage portion to a substitute area ensured in a readable/writable main memory portion forming a part of the main memory device, and subsequent accesses to the address range having the predetermined width are converted to accesses to the substitute area [col. 9, line 39—col. 10, line 5].

13. As to claim 10, Sekiguchi discloses an information processing apparatus comprising: process information saving means for saving, before restart of an OS, process information relating to a user process to a save area on a main memory device [col. 13, lines 14-52, and col. 9, line 39—col. 10, line 5]; main memory initialization means for initializing, at the restart of the OS, the main memory area used by the OS while not initializing the main memory area used by the user process [col. 10, lines 6-10]; and process restoration means for restoring the saved process information in the OS, after the restart of the OS [col. 10, line 29 – col. 11, line 35].

14. As to claim 11, Sekiguchi discloses an information processing apparatus comprising: process information saving means for saving, before restart of an OS, process information relating to a user process to a save area on a main memory device [col. 13, lines 14-52, and col. 9, line 39—col. 10, line 5]; restart flag setting means for setting a restart flag for the saved process information to designate whether the process is to be restarted or not [col. 10, lines 14-20]; main memory initialization means for initializing, at the restart of the OS, the main memory area used by the OS while not initializing the main memory area used by the user process for which the restart flag is set not to restart [col. 10, lines 6-10]; and process restoration means for restoring, after the restart of the OS, the saved process information of the user process for which the restart flag is set not to restart in the OS [col. 10, line 29 – col. 11, line 35].

15. As to claim 12, Sekiguchi discloses an information processing apparatus comprising: process information saving means for saving, before restart of an OS, process information in the OS relating to a user process to be continuously operated after restart of the OS, to a save area on

a main memory device [col. 13, lines 14-52, and col. 9, line 39—col. 10, line 5]; main memory initialization means for initializing, at the restart of the OS, the main memory area used by the OS while not restarting the main memory area used by the user process [col. 10, lines 6-10]; and process restoration means for restoring the saved process information in the OS, after the restart of the OS [col. 10, line 29 – col. 11, line 35].

16. As to claim 13, Sekiguchi discloses before the restart of the OS, the process information saving means saves process information in the OS relating to a user process to be continuously operated after restart of the OS, to the save area on the main memory device, by referring to a process ID table storing identifiers of processes to be continuously operated or of processes not to be continuously operated [col. 13, lines 14-52, and col. 9, line 39—col. 10, line 5].

17. As to claim 14, Sekiguchi discloses an information processing apparatus comprising: process save area generating means for saving, at generation of a user process, process information in the OS relating to the generated user process to a save area on a main memory device [col. 13, lines 14-52, and col. 9, line 39—col. 10, line 5]; process save information updating means for setting, at switching of the user process, a restart flag for the saved process information to designate whether the process is to be restarted or not, while updating the process information saved in the save area to the latest state if the process is not to be restarted [col. 10, lines 14-20]; process information save area releasing means for nullifying the saved process information, at termination of the user process [1004]; main memory initialization means for initializing, at restart of an OS, the main memory area used by the OS while not restarting the

main memory area used by the user process for which the restart flag is set not to restart [col. 10, lines 6-10]; and process restoration means for restoring, after the restart of the OS, the saved process information of the user process for which the restart flag is set not to restart, in the OS [col. 10, line 29 – col. 11, line 35].

18. As to claim 15, Sekiguchi discloses means for searching, when a restart flag is set for process information relating to a certain user process to designate whether the process is to be restarted or not, all the user processes belonging to the same user application program as the user process, and setting restart flags in the process information relating to all the searched user processes to the same value [col. 8, lines 19-37].

19. As to claim 16, Sekiguchi discloses means for searching, when a restart flag is set for process information relating to a certain user process to designate whether the process is to be restarted or not, all the user processes belonging to the user application program as the user process, and setting restart flags in the process information relating to all the searched user processes to the same value [col. 8, lines 19-37].

20. As to claim 17, Sekiguchi discloses means for starting up the OS from an OS main memory image stored in a nonvolatile storage portion forming a part of the main memory device [FIG. 1, "REBOOT LOADER" in main memory device 102].

21. As to claim 18, Sekiguchi discloses means for copying, at every occurrence of a write access from the OS to the nonvolatile storage portion during system operation, data in an address range having a predetermined width including the address at which the write access has occurred from the nonvolatile storage portion to a substitute area ensured in a readable/writable main memory portion forming a part of the main memory device, and for converting subsequent accesses to the address range having the predetermined width to accesses to the substitute area [col. 9, line 39—col. 10, line 5].

22. As to claim 19, Sekiguchi discloses a program for causing a computer to function as: process information saving means for saving, before restart of an OS, process information in the OS relating to a user process to a save area on a main memory device [col. 13, lines 14-52, and col. 9, line 39—col. 10, line 5]; main memory initialization means for initializing, at the restart of the OS, the main memory area used by the OS while not initializing the main memory area used by the user process [col. 10, lines 6-10]; and process restoration means for restoring the saved process information in the OS after the restart of the OS [col. 10, line 29 – col. 11, line 35].

23. As to claim 20, Sekiguchi discloses a program for causing a computer to function as: process information saving means for saving, before restart of an OS, process information relating to a user process to a save area on a main memory device [col. 13, lines 14-52, and col. 9, line 39—col. 10, line 5]; restart flag setting means for setting a restart flag for the saved process information to designate whether the process is to be restarted or not [col. 10, lines 14-

20]; main memory initialization means for initializing, at the restart of the OS, the main memory area used by the OS while not initializing the main memory area used by the user process for which the restart flag is set not to restart [col. 10, lines 6-10]; and process restoration means for restoring, after the restart of the OS, the saved process information of the user process for which the restart flag is set not to restart in the OS [col. 10, line 29 – col. 11, line 35].

24. As to claim 21, Sekiguchi discloses a program for causing a computer to function as: process information saving means for saving, before restart of an OS, process information in the OS relating to a user process to be continuously operated after restart of the OS, to a save area on a main memory device [col. 13, lines 14-52, and col. 9, line 39—col. 10, line 5]; main memory initialization means for initializing, at the restart of the OS, the main memory area used by the OS while not restarting the main memory area used by the user process [col. 10, lines 6-10]; and process restoration means for restoring, after the restart of the OS, the saved process information in the OS [col. 10, line 29 – col. 11, line 35].

25. As to claim 22, Sekiguchi discloses before the restart of the OS, the process information saving means saves process information in the OS relating to a user process to be continuously operated after restart of the OS, to the save area on the main memory device, by referring to a process ID table storing identifiers of processes to be continuously operated or of processes not to be continuously operated [col. 13, lines 14-52, and col. 9, line 39—col. 10, line 5].

26. As to claim 23, Sekiguchi discloses a program for causing a computer to function as: process save area generating means for saving, at generation of a user process, process information in the OS relating to the generated user process to a save area on a main memory device [col. 13, lines 14-52, and col. 9, line 39—col. 10, line 5]; process save information updating means for setting, at switching of the user process, a restart flag for the saved process information to designate whether the process is to be restarted or not, while updating the process information saved in the save area to the latest state if the process is not to be restarted [col. 10, lines 14-20]; process information save area releasing means for nullifying the saved process information, at termination of the user process [1004]; main memory initialization means for initializing, at restart of an OS, the main memory area used by the OS while not restarting the main memory area used by the user process for which the restart flag is set not to restart [col. 10, lines 6-10]; and process restoration means for restoring, after the restart of the OS, the saved process information of the user process for which the restart flag is set not to restart in the OS [col. 10, line 29 – col. 11, line 35].

27. As to claim 24, Sekiguchi discloses means for searching, when a restart flag is set for process information relating to a certain user process to designate whether the process is to be restarted or not, all the user processes belonging to the same user application program as the user process, and setting restart flags in the process information relating to all the searched user processes to the same value [col. 8, lines 19-37].

28. As to claim 25, Sekiguchi discloses means for searching all the user processes belonging to the user application program as the user process, when a restart flag is set for process information relating to a certain user process to designate whether the process is to be restarted or not, and setting restart flags in the process information relating to all the searched user processes to the same value [col. 8, lines 19-37].

29. As to claim 26, Sekiguchi discloses means for starting up the OS from an OS main memory image stored in a nonvolatile storage portion forming a part of the main memory device [FIG. 1, "REBOOT LOADER" in main memory device 102].

30. As to claim 27, Sekiguchi discloses means for copying, at every occurrence of a write access from the OS to the nonvolatile storage portion during system operation, data in an address range having a predetermined width including the address at which the write access has occurred from the nonvolatile storage portion to a substitute area ensured in a readable/writable main memory portion forming part of the main memory device, and for converting subsequent accesses to the address range having the predetermined width to accesses to the substitute area [col. 9, line 39—col. 10, line 5].

31. As to claim 28, Sekiguchi discloses a method for restarting an OS in a computer in which a first OS memory area for loading an OS and a process memory area for loading processes are allocated on a main memory, and the OS and the processes are loaded in the respective areas, the OS restart method comprising: a first step of acquiring process information, that is information

for the OS to manage the processes, from the first OS memory area and storing the same in a save area provided in a predetermined storage device [col. 13, lines 14-52, and col. 9, line 39—col. 10, line 5]; a second step of initializing the first OS memory area while holding the process memory area [col. 10, lines 6-10]; a third step of allocating a second OS memory area on the main memory and loading the OS therein [col. 10, lines 6-10]; and a fourth step of updating the process information in the OS memory area according to the process information stored in the first step [col. 10, line 29 – col. 11, line 35].

32. As to claim 29, Sekiguchi discloses selecting a process to be held from the processes loaded in the process memory area [col. 10, lines 56-58]; and initializing the process memory area allocated to the processes not selected [col. 10, lines 56-58].

33. As to claim 30, Sekiguchi discloses the save area is provided on the main memory [102].

34. As to claim 31, Sekiguchi discloses information indicating whether each of the processes is to be restarted or not is stored in the save area together with the process information of the relevant process [FIG. 6].

35. As to claim 32, Sekiguchi discloses information indicating whether each of the processes is to be restarted or not is stored in a separate storage device from the storage device having the save area provided therein [105].

36. As to claim 33, Sekiguchi discloses processing to generate, update and release the save area are executed in accordance with the generation, switching and termination of a process on the storage device having the save area provided therein [col. 11, lines 21-28].

37. As to claim 34, Sekiguchi discloses preliminarily preparing a nonvolatile storage device storing an image of the OS when it is loaded in the main memory, the third step referring to the image stored in the nonvolatile storage device to load the OS in the main memory [111].

38. As to claim 35, Sekiguchi discloses loading a process including a plurality of processes associated with one application program in the process memory area; selecting a process to be held from among the processes loaded in the process memory area; and initializing the process memory area allocated to the processes other than the selected process and the other processes associated with the same application program as the selected process [col. 10, line 29 – col. 11, line 35].

Conclusion

39. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ERIC CHANG whose telephone number is (571)272-3671. The examiner can normally be reached on M-F 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Lee can be reached on (571) 272-3667. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Eric Chang/
Examiner, Art Unit 2116

/Thomas Lee/
Supervisory Patent Examiner, Art Unit 2115